

What is claimed is:

1. A zoom lens system comprising a positive first lens group, a negative second lens group, a positive third lens group, and a negative fourth lens group, in this order
5 from an object,

wherein zooming is performed by moving each of said positive first through said negative fourth lens groups along the optical axis;

wherein said zoom lens system satisfies the following
10 condition:

$$0.35 < (f_{23T}/f_{23W})/(f_T / f_W) < 0.55$$

wherein

f_{23T} designates the combined focal length of said negative second lens group and said positive third lens
15 group at the long focal length extremity;

f_{23W} designates the combined focal length of said negative second lens group and said positive third lens group at the short focal length extremity;

f_T designates the focal length of the entire the zoom
20 lens system at the long focal length extremity; and

f_W designates the focal length of the entire the zoom lens system at the short focal length extremity.

2. The zoom lens system according to claim 1, satisfying the following condition:

25 $0.05 < (D_{23W} - D_{23T}) / f_W < 0.2$

wherein

D_{23W} designates the axial distance between said negative second lens group and said positive third lens group at the short focal length extremity; and:

5 D_{23T} designates the axial distance between said negative second and said positive third lens group at the long focal length extremity.

3. The zoom lens system according to claim 1, satisfying the following condition:

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$$0.5 < f_w / f_{1G} < 0.7$$

wherein

f_{1G} designates the focal length of said positive first lens group.

4. The zoom lens system according to claim 1, satisfying the following condition:

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$$12 \text{ mm} < f_{4G}(m_{4T} - m_{4W}) / (f_T / f_w) < 14 \text{ mm}$$

wherein

f_{4G} designates the focal length of said negative fourth lens group;

20 m_{4T} designates the magnification of said negative fourth lens group when an object at an infinite distance is in an in-focus state at the long focal length extremity; and

m_{4W} designates the magnification of said negative fourth lens group when an object at an infinite distance is in

an in-focus state at the short focal length extremity.

5 5. The zoom lens system according to claim 1, wherein
said negative second lens group and said positive third
lens group are arranged to maintain a predetermined
distance d1 in a short-focal-length side zooming range
which is defined between the short focal length extremity
and a first intermediate focal length, and to maintain
another predetermined distance d2, which is smaller than
said predetermined distance d1, in a long-focal-length
10 side zooming range which is defined between a second
intermediate focal length and the long focal length
extremity;

wherein at said first intermediate focal length,
all of said lens groups are moved toward an image to said
15 second intermediate focal length; and

wherein said zoom lens system satisfies the
following condition:

$$12\text{mm} < (X_{4W} + X_{4T} - \Delta X_{4MM*}) / (f_T / f_W) < 14\text{mm}$$

wherein

20 $X_{4W} = f_{4G} (m_{4M} - m_{4W});$

$$X_{4T} = f_{4G} (m_{4T} - m_{4M*});$$

$$\Delta X_{4MM*} = f_{4G} (m_{4T} - m_{4M*});$$

$$m_{4M} = f_M / f_{123M};$$

$$m_{4W} = f_W / f_{123W};$$

25 $m_{4T} = f_T / f_{123T};$

$$m_{4M*} = f_{M'} / f_{123M*};$$

f_M designates said first intermediate focal length;

$f_{M'}$ designates said second intermediate focal length;

5 f_{123W} designates the combined focal length of said positive first lens group, said negative second lens group and said positive third lens group at the short focal length extremity;

f_{123M} designates the combined focal length of said
10 positive first lens group, said negative second lens group and said positive third lens group at said first intermediate focal length in said short-focal-length side zooming range;

f_{123M*} designates the combined focal length of said
15 positive first lens group, said negative second lens group and said positive third lens group at said second intermediate focal length in said long-focal-length side zooming range; and

f_{123T} designates the combined focal length of said
20 positive first lens group, said negative second lens group and said positive third lens group at the long focal length extremity.

6. The zoom lens system according to claim 1, wherein said positive third lens group comprises at least one
25 aspherical surface that satisfies the following

condition:

$$-30 < \Delta I_{ASP} < -10$$

wherein

ΔI_{ASP} designates the amount of change of the spherical
5 aberration coefficient due to said aspherical surface in
said positive third lens group under the condition that the
focal length at the short focal length extremity is
converted to 1.0.

7. The zoom lens system according to claim 1, wherein
10 said negative fourth lens group comprises at least one
aspherical surface that satisfies the following
condition:

$$0 < \Delta V_{ASP} < 3$$

wherein

15 ΔV_{ASP} designates the amount of change of the
distortion coefficient due to said aspherical surface in
said negative fourth lens group under the condition that
the focal length at the short focal length extremity is
converted to 1.0.

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